(8.)

OBSERVATIONS,

MEDICAL AND LITERARY

RELATIVE TO THE

HISTORY OF POISON,

READ BEFORE

The Medico-Botanical Society

OF LONDON,

JUNE 8, 1830.

THE RIGHT HON. EARL STANHOPE, PRESIDENT,
IN THE CHAIR;

AND, BY DESIRE OF THE SOCIETY, COMMITTED TO THE PRESS.

BY JOHN CLENDINNING,
M.D. EDINBURGH; A.M. & M.D. OXFORD;
FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON;
&c. &c. &c.

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1830.

ADVERTISEMENT.

THE following Observations, which were written for *vivâ voce* delivery, as a discourse introductory to a series of Lectures on Toxicology, have been printed very nearly as they were pronounced. Some slight changes have been made, principally verbal ones, such as could not be avoided in preparing them for a destination differing considerably from that for which they were originally intended. Some additions will also be observed, consisting of extracts and other passages, which, from a regard to economy of time, or other causes, were omitted in the delivery, and which have been here inserted. In all other respects, the printed essay agrees exactly with the spoken.

J. C.

16, *Wimpole Street*,
June 15, 1830.

OBSERVATIONS,

&c. &c. &c.

My Lord President
and Gentlemen,

THE subject relative to which, on this and other future occasions, I shall have the honour to address you, is State Medicine in general, but principally and particularly that part of the science that contains the *History of Poison;* a subject which, comprehensively considered, presents, as we shall find, a field of inquiry and discussion of great extent, of high importance, and of various interest. The objects contemplated by that branch of science which, in imitation of my distinguished friend, Dr. Elliotson, and of several other eminent authorities, I have denominated State Medicine, may be divided into two classes. We may consider the professor of State Medicine, *practically,* as a *counsellor,* or as a *witness:* in the former capacity, as the adviser of the authorities on all matters regarding the public health; in the latter capacity, as furnishing courts of justice with information relative to all such matters of fact, or probable opinion, falling within the domain of professional experience or erudition, as may be necessary to enable juries, or other judges, to decide on questions that admit of elucidation by medical learning and sagacity. As a *counsellor,* or adviser of authority, principally, though not exclusively, he

has to decide on the Qualities of Waters, of local Atmospheres, and of various kinds of Aliment; on the Healthfulness of sites; on the Merits of various modes of Ventilating, Warming, and Cleansing human or other habitations, &c. &c.; on the best Means of preventing certain simple Uninfectious Disorders generally febrile, from assuming the Infectious Quality; on the most effectual method of arresting contagion, &c. &c. As a *witness* and auxiliary to the administrators of justice, he has to pronounce upon the nature of various organic phœnomena, natural or preternatural; to point out the physical agencies by which unusual or suspected appearances have been produced; to say how far certain facts or statements by non-professional witnesses, are compatible with the ascertained laws of life and health: in short, to decide on a great variety of questions relative to the causes and character, physical and moral, of personal injuries inflicted, criminally or otherwise; by accident, by fraudulent device, or by open violence. Such are the objects, and such the scope of that branch of science of one principal department of which you have appointed me Official Expositor.

Of the importance and various interest which, I have asserted, attach to that science, the inquirer will be satisfied, by a single retrospective glance, at what I have above stated, regarding the duties or liabilities of the Professor of State Medicine. It is quite obvious, that he who can best advise the magistracy, or legislature, respecting the general Laws and Conditions of Life and Disease; respecting the particular Signs and duration of Pregnancy; the Origin and Propagation of Febrific Miasms; the Degree or

Extent to which the Use of various Aliments, the Residence in certain Localities, the Practice of certain Trades and Professions, the Infliction of various Injuries, the Suffering of certain Privations, &c. &c. are compatible or otherwise with Life and Health.—It is plain, I say, that he who can best elucidate such points; namely, the *Professor of State Medicine, who is Master of his Science,* must be possessed of acquirements of great extent and value, and be qualified for inquiries of great importance, and high and various interest.

Of the interesting character, then, and great utility, and therefore importance and dignity of Forensic and Political Medicine, there can be no reasonable doubt; and I should scarcely think it necessary, *on your account,* to enter more fully into the examination of those claims on your attention and respect, that State Medicine can so easily substantiate. Allow me, indeed, to add, that I should think it not only scarcely necessary, but even quite *superfluous,* since the enlightened character of my auditory precludes the supposition, that many, or even the majority of those now present, are not as well aware of the importance of State Medicine as myself; and since the very foundation of a professorship of a single branch of that science, by the Noble President and the Council, with the full approbation of the Society at large, furnishes what I may call experimental proof of that position.

On *my own* account, however, I beg leave, before entering farther on the business of this discourse, to offer some observations relative to the difficulty and extent of the field of inquiry that must

be traversed by the Student, and future Professor of Toxicology and State Medicine; and this with the excusable motive, that in consideration of the extent and difficulty of those inquiries I may be allowed to request, and, if it might be, forestal your indulgent reception of my attempt to treat, to your satisfaction, such a subject in the few hours of your leisure that are likely to fall to my share.

Amongst the numerous departments, or subdivisions, into which the business of medical research and instruction have been divided, there is none that exceeds State Medicine in the abstruseness and delicacy of its researches, or that imposes on its Professor a course more wide and excursive. In proof of the difficulty of many investigations which he may be called on to make, arising out of the *obscurity* or *delicacy* of their Subjects, I shall content myself with referring to the well known results of various recent inquiries instituted by Parliament, or Courts of Law, respecting the laws of Contagion and of Paludal Effluvia, the duration of Pregnancy, the influence of Diet, Daily Occupation, &c. on Life and Health, as related in the reports of the Houses of Lords and Commons, or of the Public Prints, on the Millbank Penitentiary—on Cotton and other Factories—on Quarantine—on Typhus in Ireland—respecting the Gardner Peerage—on Insanity, &c.

With regard to the difficulty arising out of the *extent* of the Field of Inquiry, with which the Forensic and Political Physician must make himself acquainted, you will be satisfied by a rapid sketch of the connexions of State Medicine with other branches of scientific or other learning. Comprehensively consi-

dered, State Medicine is nearly related to almost every branch of natural science. From a little reflection on the following examples this will appear evident.

To *Chemistry* State Medicine owes the inestimable services of various re-agents, in the detection of noxious substances inspired, or swallowed by the suicide, or unknowingly ingested by the victim of accident, or of felonious treachery. To *Botany* it is indebted for the knowledge of numberless particulars of the last importance towards the recognition or identification of venomous bodies of vegetable origin, whether natural parts of plants, as berries, leaves, roots, or spontaneous products, as secreted fluids. From *Pathology* it must borrow a host of facts required for the detection and appreciation of organic injuries, from external force, or internal virus. From *Physiology* it derives all the information necessary to account for the morbid actions or symptoms produced by Violence, Parturition, Poison, and other causes. To the *Materia Medica* the Student of Forensic Medicine must look for information respecting those medicinal substances which are dangerous in small quantities; respecting the doses of them, the precautions necessary to their safe and salutary operation; and other points of importance. From *Therapeutics* must be borrowed the theoretical principles and practical rules by which the Professor of Forensic Medicine must be guided; not only in the treatment by himself of cases of injury from Violence, Poison, or other sources; but also in the formation of his opinion respecting the merits of others, when he is called to the aid of a jury engaged; let us suppose, on a

trial for *mala praxis,* or for any one of several other possible transgressions, civil or criminal.

Nor does the catalogue of its relations to other branches of the science of creation end here. Amongst *insects, fishes,* and *reptiles,* are to be met with some of the most active Poisons. Of the first, or *insect* tribe, we may refer to the Cantharid genus; of the second, or *finny race,* I may cite the Rock fish, the Barracuta, the King fish, and, most deadly of all, the *clupea thryssa,* or yellow billed Sprat; and of the third, or *reptile* class, there are, unhappily, too many tremendous examples in the genera, *Crotalus, Boa,* and *Coluber.* Thus State Medicine, both in its forensic and political departments, is more or less dovetailed with *Entomology, Icthyology,* and *Ophiology.* In like manner it is connected with *Mineralogy,* many of the principal Poisons being prominent agents in the history of *fossils;* and with *Anatomy,* in the most abstruse branches of that science, as comprehending the doctrine of *herma-phroditism,* and other *monstrosity.*

To its numerous leanings and dependencies on natural science above alluded to, we have to add other, and not less onerous, requirements. The Professor of State Medicine must, to an extensive knowledge of nature, add some acquaintance with *Law.* Now, in these kingdoms, there is no *code* or statute book; there are laws without end, and from almost every source; civil, feudal, traditional, canonical, parliamentary, maritime; together with a copious supplement of laws, called *precedents, decisions,* and so forth, and for which we are indebted to the wisdom of the dignitaries of our courts of justice. Of these

there are commentaries, digests, and reports in plenty, and of great excellence, but unfortunately much too voluminous for the leisure of a short and busy professional life; but there is no recognised and *authoritative* version of the national will and pleasure. To acquire such a knowledge of law therefore, as it would be in many instances desirable for the forensic Physician to possess, is matter of great difficulty.*

There is another difficulty, distinct from any yet alluded to, demanding higher efforts and attainments, and one which the Professor of Practical Forensic and Political Medicine is often called on to encounter; and when I shall have attempted to set that difficulty in its true light, I shall have finished what I think necessary to lay before you, with regard to the extent of the science of State Medicine, and the magnitude of the task with which he must charge himself, who undertakes to treat it with a zeal and an industry proportioned to its importance.

As a witness on prosecutions for Nuisance; as an adviser of the legislature or magistracy, relative, for example, to Sites of suspected salubrity, or to Diseases reputed contagious, or to fictitious Disorders; in short, to any of numberless questions towards the elucidation of which the authorities, if wise, will seldom fail to call medical erudition and sagacity to

* The preceding the author wishes to be considered as merely one of those sly safe cuts, to which good natured fellows are so apt to treat their absent friends. There was not, as he expected and believes, a single gentleman present at the delivery of the lecture, in any way connected with the legal profession.

The author knows himself to be incompetent to form an opinion respecting the great question agitated by the singular author of the Defence of Usury, Book of Fallacies, Principles of Morals and Legislation, &c.; namely, the *practicability* of a code.

their aid; in all such cases it is obvious, that the practical judgment and ability of the Physician will be put to the severest tests. Sinister interest will leave no artifice untried to mislead him; every obscure spot in the path of his investigation will, if possible, be farther darkened; every difficulty will, as far as practicable, be augmented; and every possible additional impediment be provided to perplex and deceive him: Thus beset with *false facts* and contradictory evidence, well aware of the hypothetical nature of great part of human science, and at the same time conscious of the imperfection of the medical art, it will surely be admitted, that a large share of *solid knowledge* and *practical wisdom,* as well as mere *technical skill,* is required to enable him, in such a situation, to avoid falling, on the one side, into the extreme of a barren imbecile indecision and scepticism; or, on the contrary side, into the folly of a rash and ignorant dogmatism: the former, an error to which, under such circumstances, the propensity has apparently proved too strong, even for the admirable Hunter; and the latter, a folly, of which the records of Forensic and Political Medicine furnish but too many examples.

So much I have thought it necessary to *premise,* with regard to State Medicine *in general.* I shall now direct your attention more particularly to that one of its branches, to the consideration of which, by the title of my office, I appear to be exclusively pledged: I allude, of course, to *Toxicology.*

There is associated with the very name of *Poison,* a popular terror, an idea of *sudden dark* destruction,

that must ever give to toxicological inquiries a considerable general interest. The almost instantaneous change that Poison often produces, from cheerfulness and ease to anxiety and pain; from health and security in one hour to all the horrors perhaps of mortal agony in the next; contrast too strongly, too frightfully, not to impress the unlearned observer with thoughts and feelings, which however vague and shadowy, are still too painful to prove transitory and be forgotten. Every one, too, has heard of the tremendous powers of poisonous reptiles; as of *the Rattlesnake of America;* the *Cobra di capella of India; the Vipers of Egypt, Carolina,* and various parts of Europe. Indeed, the poison of those animals, at once the sword and target of their reptile owners, seems to have been the first to attract the attention of mankind, and accordingly makes the principal figure in the pages of the early Toxicologists. The destructive powers of the *upas* of Java, of the *woorara* or *wourali* of Guiana, of the Poisons used by various savage tribes of Africa, as described in the writings of experimental Physiologists and Toxicologists yet living, and in the narratives of travellers of distinction and credit of the present day, are matter of popular notoriety.

I need not inform my enlightened readers that I allude to the labours of Mr. Orfila, Mr. Brodie, Dr. Philip, and other eminent gentlemen amongst the former, and to the narratives of Professor Lichtenstein, Mr. Waterton, Baron Humboldt, and others among the latter.

In our own country, and almost under our own observation, several very striking examples of homicide and of accidental death by Poison, have occurred. Most persons of mature age have probably heard of

the case of Sir Theodosius Boughton, which made such noise some fifty years since: it excited an extraordinary interest at the time, on account of the great respectability of all the parties; the rank and age of the victim; the rare occurrence of the Poison in forensic inquiries; the difficulty of identifying it by means strictly professional; and the singular testimony of the great Physiologist above mentioned.

The story is in substance, that Sir Theodosius Boughton, a young Baronet of good fortune, expired suddenly after having taken a draught administered to him by his mother, Lady B. It was proved that the contents of the bottle smelt strongly of bitter almonds; that it was labelled "purging draught;" and that Sir J. B. conceived he was taking a medicine similar in its nature to one he had, without inconvenience, taken some days previously, and consisting merely as he supposed, of jalap and rhubarb in some simple vehicle. He never spoke after. In a very few minutes he began to struggle, as if trying to overcome a strong involuntary effort to vomit, and in fifteen minutes was dead, or at least moribund; with eyes fixed, teeth clenched, and froth running out at each corner of his mouth. It was proved that the supposed assassin entered the deceased's bedroom about five minutes after his apparent death; inquired about the medicine; emptied out the bottle that remained, containing a second dose of the same medicine of which the Baronet had taken one, into a slop basin, and when reproved by Lady B. for having done so, filled the bottle of which the Baronet had taken the contents, with water, under pretence of wishing to taste without danger. It was proved that Donellan, the person suspected, had had in his possession a still, such as might be used for distilling laurel water: those and other circumstances established on the trial by ample proof, leave no doubt on the mind of most persons that Sir J. B. died by Poison, and that Mr. Donellan was guilty of his murder. However, they were not sufficient to satisfy Mr. Hunter, from whom the court could extract no

more satisfactory reply as to the cause of death, than that he could give no decided answer.*

In 1817, a very remarkable case occurred; I allude to that of Mrs. Downing.

Still more recently has been announced the death, by Poison, of an individual elevated to the highest rank in British society; a death the more shockingly impressive, because occasioned by a draught administered to the prelate by mistake, and by the hand too of his dearest friend.

My readers will doubtless perceive, that I allude to the melancholy death of the late Archbishop of Armagh.

An example somewhat similar, has happened within this present year, in Scotland, in the case of a worthy Baronet, who, together with several friends, partakers of his hospitality, suffered to a most alarming extent, from the effects of *arsenic*, with which the champagne used by the party, was afterwards proved, by the Professor of State Medicine of the illustrious University of Edinburgh, to have been contaminated. Both

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* The remarks in the text are in accordance with the opinions of several able writers; yet, on reflection, I have, I confess, some doubts as to the justice of the censure of the illustrious witness implied in them. Taking an exclusively professional view of the evidence, leaving out of consideration altogether, as was expressly required by the Court on that occasion, all particulars not proved by medical testimony, such as the *smell* of the *draught*, the *possession* of the *still*, &c. &c. and bearing in mind that there are no symptoms, or at least that there were none sworn to, so characteristic of prussic acid as *of themselves* to warrant the affirmation of its presence on oath, and that no *chemical evidence* was offered to establish its existence in the phial or in the stomach of the deceased; I think I am justified in expressing a suspicion, that Mr. Hunter has been rather severely censured for his refusal to give, as a medical man, a decided answer. See extracts from the trial in the excellent work so often quoted, *viz.* Paris and Fonblanque's Medical Jurisprudence, vol. iii. p. 213, et seq.

these last cases, with several similar, are matters of general notoriety: thanks to that Palladium of Justice, Useful knowledge, and Common sense, the *British Press.*

Suicide by Poison occurs every day, and constitutes, in fact, a leading article in the bill of fare presented to the public, night and morning, by the daily papers.

To the same end, namely, that of *attracting public attention to Toxicology,* the writings of Sir G. Baker, Dr. Lamb, and others, on *colica pictonum,* and other diseases referable to the employment of leaden cisterns for water, for domestic use; to the practice of colouring cheese with *minium,* or red lead; of sweetening cider, sour wines, &c. &c. with *ceruse,* or other forms of lead; and other mischievous practices of fraud and ignorance: and still more lately, the publications of Mr. Accum relative to the impurities and contaminations to which almost every article of food, as he avers, is liable, must have powerfully contributed.

Nor is that *popular* interest above alluded to, likely to suffer in point, either of vivacity or extent, from the undeniable obscurity attending the operation of poisonous bodies, or from the imperfection of our toxicological theories, or frequent inadequacy of our remedial resources. On the contrary, in this, as in other instances, the mystery probably rather enhances the importance of the object it envelopes.

Many circumstances contribute *indirectly,* to give to toxicological inquiries, an interest in the eyes of the learned, and generally of the enlightened classes, which might not otherwise belong to it. One of these is the high Antiquity of Writings on Poison,

still extant. We can refer to a Toxicologist that wrote nearly *two hundred years before the Advent of Our Saviour;* I allude to *Nicander* of *Colophon,* physician to one of the *Attali* kings of *Bithynia,* about the hundred and sixtieth Olympiad. After him we have the works of a great many authors of celebrity, Greek, Latin, and Arabian; such are *Galen, Dioscorides, Celsus, Rhases, Avicenna.*

Another source of interest to the enlightened, lies in the *numerous accounts given by historians, of homicide effected by Poison,* often in the highest ranks of life, and for purposes the basest and most odious.

The fates of *Socrates, Demosthenes, Cleopatra, Hannibal,* &c. as described by Plato, Livy, Plutarch, and other writers, are familiar to most men of liberal education.

Of that of Socrates, we have a very interesting account in the dialogue of *Plato,* called *Phædo;* that in which are developed the Socratic, or rather probably the Platonic notions respecting the immortality of the soul. Socrates is there stated to have been put to death by Poison, which was one of the Athenian modes of execution.

In the *thirty-ninth book of Livy,* we have an interesting account of the death of Hannibal. *Prusias,* king of *Bithynia,* to whose court he fled after the defeat of *Antiochus* his former protector, had for some time sheltered him, but was at length influenced, by promises or threats, to betray him. The Old Man, long the Glory of Carthage, and the Scourge of Roman Pride and Ambition, finding his house surrounded by soldiers, and every other mode of escape denied him,

drank Poison, (with which, as a resource against treachery, he had long been provided,) and with those memorable words, expired; " *Liberemus diuturnâ curâ populum Romanum, quando mortem senis,* &c. &c." " Let me release the Roman people from protracted anxiety, since they are weary of waiting for the death of an old man. Nor will this victory bring much glory to Flamininus, over Me who am unarmed, and have been betrayed. How much have the Romans degenerated! Their Fathers warned Pyrrhus, while carrying on war against them in the heart of Italy, against the treachery of his physician, *(see Plutarch's Life of Pyrrhus;)* but They have sent an agent of consular rank, to compel Prusias to murder his guest."

Amongst ancient accounts of another class, I may refer to the *eighth book* of the same history of Livy, in which we find it stated, on the authority of preceding writers whose works are lost, that in the four hundred and twenty-fourth year of the city, *one hundred and seventy* Roman matrons, some of patrician blood, were executed, out of a larger number, convicted or suspected of the crime of Poisoning.

In the *twelfth and thirteenth books of Tacitus's Annals,* we have an account of a woman called *Locusta,* mentioned also by *Suetonius, Juvenal,* &c., who was renowned for her skill in compounding Poisons, and who was long kept as a tool of power, " *inter instrumenta regni,*" says Tacitus. By her agency, *Claudius* was poisoned by his wife *Agrippina;* as was also *Britannicus,* by order of his brother *Nero.* Indeed, thirty or forty years before the latter event, as we learn from the *fourth book* of the same *annals,* Poison was so much in use as a

political engine, an *instrumentum regni*, that *Agrippina*, A.D. 26, refused to eat of some apples offered to her at table by the royal hand of her father-in-law, *Tiberius*.

In the *second book* of the same annals, and at the beginning of the *fourth book of Suetonius's History of the Cæsars*, we read one of the most melancholy stories on record; that of a death generally believed, and by *Dio Cassius (B.* 57, *p.* 615, *Han.* 1606) positively affirmed, to be by Poison. I allude to the case of *Germanicus*, (nephew and adopted son of *Tiberius*, and father of *Caligula;)* "who possessed every virtue of mind and body in a degree," says *Suetonius*, "that no man ever possessed them." He was a warrior, an orator, a poet; appears to have been singularly benevolent, amiable, magnanimous, brave, eloquent, and learned. During his life he seems to have been loved by the Romans almost to idolatry, and his death was lamented with universal and almost frantic sorrow. "*Funus sine imaginibus et pompâ*," says Tacitus, "*per laudes et memoriam virtutum ejus celebre fuit.*"—*Tacitus, vol.* I. *lib.* ii. *p.* 138.

In modern times also like crimes are recorded. We are informed by historians, that in 1503, *Cæsar Borgia*, in addition to numberless previous atrocities, attempted, by Poison, the lives of several cardinals, at a banquet given by his father, Pope Alexander VI. at the Belvidere palace: fortunately, by some oversight, the butler changed the flasks, and gave to the Pope and his Son the *poisoned wine*, provided for the nine Cardinals their intended victims.

"Ma Iddio giusto," "volendo levar del mondo così horrendo mostro, lo condusse, che insieme col' impio padre, ei bevesse di quel vino avelenato, colquale voleva avelenare alcuni cardinali."

[*To which passage of Bishop Garimberto, (Vite, &c. &c. d'alcuni Papi, &c. Vinegia*, 1567, *lib.* v. *p.* 440.) *I may add from the Italian edition of Paulus Jovius*]; "Che cenavano seco, havendo il bottigliere cambiato disavedutamente i fiaschi; ma non potendo Allessandro reggere alla furia del veleno, sopravisse Cæsare alla morte del padre, e' alla sua miseria, &c." See *M. L. Domenichi's translation of P. Jovius's Hist. sui temp. Ven.* 1560, *part* I. *lib.* viii. *p.* 205.

The story of *Tophana*, the Locusta of modern Italy, as Dr. Paris has appropriately styled her, is recorded by various writers. Amongst several that speak of her, I may cite the *Père Labat*. In *vol.* iv. *chap.* 3, of his *Voyages d'Espagne en Italie*, printed at Amsterdam in 1731, he mentions, that for years she had driven an extensive trade in her homicide solution, or *acquetta di Napoli*, as it was commonly called. She sold it in phials, labelled "*Manna of St. Nicholas of Bari*," which was the popular name for some sort of oily fluid, of reputed supernatural virtues, said to flow from the tomb of a saint, called Nicholas, buried at Bari, near Naples: under which disguise it escaped examination by the officers of excise. Her practices, according to Labat, were detected in 1709; but by availing herself of the immunities of convents, and other religious *asyla* of criminals, she escaped punishment, and continued to sell her stygian waters for more than twenty years after, and was, as we are informed by *Keysler*, much visited in her prison, by curious strangers, and quite a *lion* of Naples in 1730, when he visited Italy. See his *Travels, London* 1758, *vol.* iii. *let.* 57.

In *Hoffman*'s Rational System of Medicine, (*vol.* i. *of the Geneva edition of his works, dated* 1740,) we are further informed, on the authority of a letter of

his friend Garelli, first physician to the Emperor Charles VI., that Tophana confessed, on the rack I believe, that she had been accessary *to more than six hundred murders* by her Poison; which seems to have been *a solution of arsenic, in a decoction of the cymbalaria* or toad-flax.

During the pontificate of Alexander VII. an association of young married women, headed by a woman named *Hieronyma Spara,* was detected at Rome, and by their own confessions, convicted of various murderous practices, by means of Poison. *Spara* is said to have been a large dealer in *acquetta di Napoli,* the art of making which she had learnt at Palermo from Tophana.

For the account of Spara, see Beckman *Beyträge zur Geschichte der Erfindungen, &c, Leipzig,* 1782, *b.* i. *s.* 270, who refers to *J. S. le Bret's Magazin zum gebrauche der Staat-und Kirchen Geschichte, Theil* 4, *Frankfort und Leipzig,* 1774, to which I have not had access.

In modern France we have also the histories of *Mr. De St. Croix,* the marchioness *de Brinvillier,* the priest *Le Sage;* the women, *la Voisin, la Vigoureux,* and others, whose proceedings made great noise, and gave rise, under *de Louvois* and *de Montespan,* to the iniquitous tribunal, called the *Chambre Ardente,* or Court for the Trial of Poisoners, about 1679, or 1680. Of those persons, various particulars are given by *Voltaire* in his *Siècle de Louis XIV.*—by *Madame de Sevigné* in her *Letters*—by *Mr. Bruzen de la Martinière* in his *Histoire de la Vie et du Regne de Louis XIV.*—by *Stentzel* in his Essay *de Venenis temporaneis,* &c. &c.

An Italian called *Exili,* it appears, began to sell

Poisons about 1670, to indemnify himself for his losses in previous years in search of the philosopher's stone. From him St. Croix learnt the art of compounding, which he taught to his paramour Madame de Brinvillier. She had Poison administered to her Father, Brothers, Sister, and others of her family, either to be avenged for their attempts to separate her from St. Croix, as *Voltaire* has it, or for the sake of trying the strength of her compounds, according to *Madame de Sevigné*. For the latter purpose, she is likewise said, by *de la Martinière*, to have distributed poisoned biscuits amongst the patients of the *Hotel Dieu*, on pretence of charity, which, however, Voltaire denies. *Stentzel* says, that popular opinion gave her credit for the invention of the "poudres de succession," in which, however, I believe he wrongs her. The practices of the poisoners became known in 1673. In that year, *la Chaussée*, the servant of St. Croix, was broken on the wheel; St. Croix himself also suffocated by the fumes of some Poisons he was preparing, owing to the falling off and breaking of a glass mask that he used on such occasions; and Madame de Brinvillier was forced to fly. She eluded justice for some years, but was at length brought to punishment. In 1676, or 1679, she was enticed out of her place of refuge, a convent I think, at Liège, by a police officer, who had for some time courted her in the disguise of an *Abbé*, and persuaded her to accompany him, as she was led to believe, on an excursion of pleasure. She was beheaded and burnt at *Notre Dame*, about the middle of the long reign of Louis XIV.

The practice of Poisoning, however, did not cease with her; for Voltaire says, that it was still in use in

1680, in which year *la Vigoureux* and *la Voisin* were burnt alive, and several other common people hanged for that crime.

Even at the present day such practices are not unusual in France. The inhabitants of *la Bresse* and *la Sologne,* districts of that fine kingdom, notorious for malaria and insalubrity, and in which the moral, not less than the physical and intellectual man is degenerate and debased,* are distinguished not only for general immorality, but particularly for the meanness of their vices, and the cowardly character of their crimes. In those districts, as we learn from *Fodéré—Medicine legale—& Monfalcon—Histoire des Marais—* Infanticide before and after birth, Perjury, Arson, Forgery, are said to be comparatively frequent; Murder by open violence, Burglary, Highway Robbery, and other bolder crimes comparatively rare. Amongst such a population, Homicide by Poison we might conclude, *à priori,* to be of familiar occurrence. We are accordingly, by those and other writers, assured, that Poisoning is even now much practised in those countries.

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* "Ses facultés morales sont encore au dessous de ses facultés intellectuelles; tautôt son ame corrompue se livre a des vices hideux, a des crimes obscures; tautôt il traverse sa courte vie sans avoir pensé au aimé, peu different du lourd quadrupéde qui languit auprès de lui."——"Dans ces pays miserables le cœur n'a pas d'accent, la douleur morale n'a jamais parlé; ces malheureux voient avec une stupide indifference la mort entrer leure chaumiere. Ils n'ont ni famille ni amis—une larme ne mouille pas la paupiere du fils qui voit mourir sa mére; un soupir ne redit pas la souffrance d'un epoux condamné a vivre apres avoir perdu celle qui s'etait associée a son sort. Que leur importe la vie? Pourraient ils la regretter? Elle n'a eté pour eux qu'une longue douleur," &c. &c.

Nor have such crimes been unknown in England. In 1809, a person named *Mary Bateman,* was detected in Yorkshire; she had, it appeared, by various devices, impoverished several families, and afterwards had made away with the lives of her dupes, to get rid of their complaints and importunities: an example of amazing depravity for Britain, and in the nineteenth century! *See the able work of Dr. Paris, vol.* ii. *p.* 269.

Considering then the *great number and variety of facts calculated to give interest to Toxicological Enquiries, that are recorded in the pages of history, or that constitute matters of popular experience,* and come under the notice of almost every one in daily life, we may reasonably conclude, that the public in general feel some interest in our pursuits, and appreciate Toxicological Science as correctly as they do any subject, with the extent of which they can be but slightly acquainted, and whose elements, in so many instances, lie far away from the beaten tracks of observation.

My Lord President,

Active as has been the press of late years, and however extensively in the present day, as compared with past time, may be diffused the elements of Toxicological Science, still Toxicology in particular, not less than State Medicine in general, is, like Botany, Geology, Chemistry, and many other branches of knowledge, an Edifice of modern Construction; a Pile, it is true, the materials of which have been elaborated, and transmitted to us in great part by those juniors

of our race, whom we whimsically entitle "*the Ancients;*" but still an edifice, the plan and proportions, and for the most part the materials likewise of which, are of modern discovery and arrangement. It does not appear certain, that our predecessors of remote ages were acquainted with the more active mineral Poisons.

Frederick Hoffman declares in the second part of his General Pathology, that the "true mineral Poisons were unknown to the ancients." Dr. Paris says, that *sublimed arsenic, corrosive sublimate, mineral acids, and caustic* alcalies, are first mentioned by Avicenna, in the tenth century. *Sublimed arsenic, corrosive sublimate, turbith mineral,* &c. I find in a treatise by that learned Arabian; (See his *Opera Medica, Venetiis* 1564, *vol.* II. *lib.* iv. *fen.* 6, *tract* i.) but whether he is the first that mentions them, I have not myself had leisure to investigate the early history of Chemistry to determine. In *Dioscorides,* who wrote about eighteen centuries since, I have been able to find but five or six minerals reputed poisonous, with whose composition I am acquainted—namely, red and yellow *sulphuret of arsenic; white lead;* a preparation of *copper,* I think the *sulphate; quicksilver,* which, however, when pure, is not properly a Poison, (of which, indeed, Avicenna—*op. et loc. citatis*—seems to have been aware;) and *metallic lead,* which is open to the same objection as mercury. Of those Poisons, I find *ceruse* and *litharge* mentioned by *Nicander.* I find nothing in Dioscorides, of the mineral Poisons mentioned above on the authority of Dr. Paris, as unknown before the middle ages; nor of *arsenical oxyde,* or *acids,* or *salts;* or of *barytes;* or of *nitrate of silver;* or other poisonous salts, metallic, earthy, or alkaline. The omission of *arsenical oxyde* is the more unexpected, as it has been, if I mistake not, from time immemorial, in use all over India, as a remedy for various diseases.*

* On consulting *Bontius (de med. Ind.),* I find no mention of arsenic, I cannot recollect the authority on which I have hazarded the position.

Neither probably were the ancient Greeks, or Romans, acquainted with even the Majority of the poisonous Bodies of Vegetable origin, treated of in modern works on Toxicology. It is certain, that that most active class of Poisons, *viz.* the Vegetable Alkalies, were wholly unknown to them, the perilous advantage of their acquaintance being exclusively due to modern Chemistry. Several very powerful vegetable Poisons, however, some of which we know; others, respecting which we are still uncertain, were well known to early antiquity. *Opium, Henbane,* some *Fungi, Colchicum* probably, besides *Aconite, Conium,* and other uncertain Poisons, are mentioned in the *Alexipharmaca* of Nicander, more than two centuries prior to the Advent of Our Saviour. About the time of Hippocrates, *Oil of bitter almonds* was known to *Xenophon.* The *Laurel* is mentioned as a Poison, by *Strabo,* about Our Saviour's time;* and a little later, we find *Nightshade, Elaterium, Hellebore,* &c. added to those already mentioned, by Dioscorides.

Yet, however ancient the first notices of several *vegetable* Poisons, and though our acquaintance with the principal *mineral* Poisons be comparatively modern, still it is quite true that the history of the latter is much more advanced than that of the former; and this from many causes. One cause has been the *Want of a scientific botanical Arrangement and Nomencla-*

* What Strabo says, is, that in the march of Alexander's army through the country of Gedrosia, in India, many beasts of burden were lost from having eaten of a plant resembling the *laurel or bay tree.* (φυτον τῃ δαφνῃ ὅμοιον.) I find no mention of Laurel Poison elsewhere in Strabo. *Vide Strabo's Geography, b.* xv. *p.* 829, *Basil* 1571. The symptoms were foam (at the mouth), and other signs of epilepsy.

ture. Botanical science was very rude and imperfect amongst the ancients—botanical descriptions were consequently loose and vague, and botanical names variable and equivocal. Hence it has been found, in numberless instances, impossible to fix with certainty on the plants spoken of in ancient writings; and thus, in many cases, the experience of past ages has been wholly lost to succeeding times.

Another cause is the comparative *instability* and, at the same time, the *complexity* of *vegetable compounds,* and the consequent imperfection of vegetable chemistry. Mineral Poisons consist usually of *two* indestructible primary elements, and those attached to each other with considerable incorporative force; whereas Vegetable Poisons are constituted by at least *three* different primary elements, so feebly combined as to be easily separable, and even in one very remarkable case, to undergo (almost inevitably when quite pure) spontaneous decomposition in the course of a few days.

> By the way I may observe, that the substance just alluded to, and which constitutes the active principle of the Laurel Poison mentioned by Strabo, is at the same time the most potent venom on our list, and the very Poison in whose detection or neutralization chemistry affords us the least assistance. As it often produces, even in small quantities, instantaneous death, so antidotes must generally come too late; and its extreme volatility and diffusibility, and the singular instability of its constitution, render the successful employment of chemical tests a matter of the greatest uncertainty and difficulty.*

* "There is every reason to believe," says Dr. Granville, "that the prussic acid, taken in large quantities and in its concentrated state, is partially, if not wholly, absorbed before it reaches the stomach; else how happens it, that scarcely a minute after its ex-

Although, then, it must be allowed that Vegetable Toxicology in its *forensic* relations, is far behind that of Minerals; it is at the same time undoubtedly in a much less backward state as it regards Therapeutics. In most instances, in fact, the difficulty of *treating* a disease produced by Vegetable Virus, is by no means so great as that of *detecting* and *identifying* the particular delinquent Poison.

It is in its relations to *curative* Medicine, then, rather than as connected with *forensic* Medicine, or even Medical Police, which I have elsewhere called Political Medicine, that Botanical Toxicology possesses a high degree of interest—I have said, *or even Medical Police,* which I am aware, in most works, includes the consideration of the doctrine of Miasms; because, however important, as I shall have occasion hereafter to shew, the subject of Vegetable Morbific Effluvia, to which you are aware, *yellow fever, dysentery, plague, cholera morbus, opthalmia, typhus,* and other disorders, have been, on more or fewer occasions, attributed; still, I think, there can be no doubt, that the noxious miasms of densely inhabited places, which, in England, cause perhaps even a greater mortality than those of rural origin, are, if not entirely, yet principally, derived from animal matter.

Poison has been very variously defined. The name "Poison" is of popular imposition, and consequently

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hibition, I have, in common with others, been unable to detect its presence within that organ; if so, then all chemical attempts must be nugatory—no decomposition, or fresh combination, can be produced to render it harmless" during life Dr. Granville means; or, as may, with some appearance of reason, be added, to detect it (chemically) after death. Granville on Prussic Acid, 1820. p. 92.

of loose acceptation, and fluctuating import. The definition of the learned *Gmelin*, which has been adopted, with commendation, by the not less learned and able Dr. Paris, and by others, is as follows. "*A substance which, internally administered or externally applied, in a small dose, impairs health or destroys life.*"

I have looked into Gmelin's *Allgem. Geschict. der Miner. Gift.* but have not found the definition just quoted, which, therefore, I give on the unquestionable authority of Dr. Paris. Possibly the German edition, to which only I have had access, differs from the Latin one, from which apparently the learned author quotes.

In an English Dictionary now before me, I find the following definition, which appears to me as good, or rather better, than that of *Gmelin*—namely, "*a substance that destroys or injures life, by a small quantity, and by means not obvious to the senses.*" It is obvious that, by the latter, Mechanical Agents are, as they ought to be, completely excluded; which they are not, however, by the former. Nor need we be surprised that in such a matter Sheridan should excel *Gmelin*—the man of words surpass the student of nature. How, in fact, should the naturalist better know the meaning of a popular term than the lexicographer? Over the meanings of words of popular use Philosophers have, as such, no peculiar authority or jurisdiction. In such matters there is no law but those of tradition and usage—Fashion, says Flaccus, *Cujus jus et norma loquendi est.*

The Comprehensiveness of the word Poison is as wide as its Application is dependent and fluctuating. There is almost no substance which, under some cir-

cumstances, and to some states of susceptibility, permanent or transient, has not exerted an envenomed influence. A substance may be Poison to one, or even to numerous classes of Animals, and yet prove harmless, or even acceptable food to others. *Paul Zacchias* says, on the authority of *Langius* and others, in the second book of his *Medicolegal Questions*, that Storks and Quails feed on *Hemlock* and *Monkshood*. (*Quest. Med. Leg. lib.* ii. *Romæ*, 1621.) *Aloes*, one of our most useful medicines, is said by *Plenck*, to act as Poison on the Dog and Wolf. *Parsley seed*, the same eminent Toxicologist pronounces poisonous to Birds; *Pepper* to Swine; *Nuxvomica* to Cattle; *Indian Berry (Kokoskörner)* to Fish and Lice; *Bitter Almonds* to Fowl, Cats, and Foxes; none of which, however, are very deadly Poisons; some of which are harmless to Man. (*Toxicologie, s.* 12. *nota. Wien.* 1785.) The *Phellandrium*, or water hemlock, is said to poison the Horse, but nourish the Ox; the *Doronicum*, or leopard's bane, destroys Dogs, but is eaten with safety by the Antelope. We are further informed by Dr. Plenck, (*Op. et Loc. Citat.*) that the Stork feeds on the seeds of *Hemlock;* the Pheasant on those of the *Thorn Apple;* the Quail on those of the *Darnel Grass;* and the Hog on the roots of *Henbane;* all of which are poisonous to Man as well as to many Animals. Dr. Parr declares in his Dictionary (article *Venenum*), that the Horse can consume *Arsenic* with impunity, and even with advantage to his condition, to the frightful amount of a *Drachm daily*. The *Œnanthe crocata*, or hemlock dropwort, which is Poison to Man, is, according to Withering, wholesome food for the Sheep. The *Cicuta Aquatica*, which is deadly to man and to the

Ox, is greedily devoured by the Goat, and safely eaten by the Horse and Sheep. *Cantharides,* which were denounced, more than twenty centuries since, by the poetical Toxicologist of Colophon,

Μη μεν κανθαρίδος σίτηφαγε, &c.

Heus fuge cantharidum, si quando olfeceris, haustum
Qui bibit - - - - - - - - - - molestos
In labiis morsus atq; ima sentit in alvo.
Nec minor exercet mediam dolor: horrida surgunt
Ulcera vesica; compressum pectus anhelat.
Ira venit vehemens, et pandiculatio corpus
Distendit defectum animo; vis dira veneni
Prævalet, et miseros præter opem pascitur artus, &c.
Nicander, Alexipharmaca. Parisiis, 1557. P. 136, 137.

and which are deadly to most animals, are greedily devoured, as we are somewhere informed by Messrs. Kirby and Spence, in their excellent *Elements of Entomology,* by a coleopterous insect of the genus *Ptinus.* To which examples, already too numerous, I may add, that Fontana found that *viper Poison,* and the American Poison, called *Ticunas,* have no power over various kinds of *serpents,* on which he experimented, some of them of harmless species; nor over the *snail,* the *leech,* nor the *water tortoise.*

Poison is also relative to the *individual.* Every one has met with instances of peculiarity of Habit or Constitution, called technically *idiosyncrasy;* owing to which, medicinal or alimentary substances, suitable or agreeable to the mass of mankind, have proved unfit, or even dangerous in very small quantities, and in some cases decidedly poisonous. Of Medicinal Agents, *mercury, prussic acid, colchicum, opium, cantharides,* may be mentioned. I know a

Gentleman who has an hereditary intolerance of *opium*, the smallest quantity of which deranges him in the most unpleasant manner. There is a Friend of mine to whom the smallest dose of any *mercurial* preparation cannot be administered: but such examples of intolerance of active medicinal substances are familiar to every practical man.

Of Alimentary Substances, I may refer to *shell fish*, one species of which, namely, the *common muscle*, has proved poisonous to many, even in this country. *Honey*, likewise, is an example; one species of it found near the town, *Heraclea Pontica*, is enumerated amongst Poisons by Dioscorides; to which other kinds, European and Asiatic, are added, in the *twenty-first book of Pliny*. We have a remarkable example of the effects of certain Honeys, in the History of the Expedition of Cyrus, and Retreat of the Ten thousand. In the *Fourth book of the Anabasis*, Xenophon states, that after defeating the army that attempted to prevent their passing the Colchian mountains, the Greeks found great quantities of honey, "with which the soldiers made very free: but those who ate much lost their senses, were attacked with vomiting and diarrhœa, and became so weak, as to be unable to stand upright. Some also of them looked like maniacs, others, like men about to expire; while those who ate little were merely, as it were, intoxicated. On the third and fourth days, however, they were all recovered, but yet seemed as if recently under the influence of medicine."

I may also refer to *Eels* as a pertinent Example, by the incautious use of which, it is said, one of our Early Monarchs lost his life. Instances of the present

class in fact abound. The illustrious *Boerhaave,* we are informed by *Van Swieten* and *Haller (Elementa Physiologiæ, v.* iv.), could not use veal broth without disturbance of his health. *Pliny* mentions in his *nineteenth book, chap.* vi. the case of a Roman knight, named *Mela,* who was poisoned by a small quantity of the juice of leeks. *Platina,* in his *Life of Pope Paul II.* states, that that Pontiff died of the consequences of excess in the use of melons; which fruit we are assured, but I suspect erroneously, by *Stentzel,* proved fatal likewise to the emperor Albert II. and to Sophia, wife of Ladislaus Jagellon, king of Poland. There is on record a case of very singular idiosyncrasy, *viz.* that mentioned by *Schenckius,* I think, of a person on whom astringent medicines acted as aperients, and *vice versâ,* aperients as astringents.

The Efficiency of Poisonous Bodies depends in very different degrees on the Doses administered: the Poison *ex. gr.* of the rabid Dog or Cat, that of *syphilis,* and of several other diseases, produce their full effect on the constitution, in the smallest possible quantities; whereas, Oxalic Acid, on the other hand, in doses of many grains, and Nitrate of Potass, in scruple or half drachm doses, will often produce no inconvenience whatever.

The Activity of Poisonous Bodies, in other words, the Title of such bodies to the rank of Poisons, depends much on the Circumstances of Individuals—on their Race—their Climate—their State of Health—and even on the Mode of Application of the Poison to the living body.

Northern nations seem less susceptible to narcotic and other Poisons of vegetable origin than those of

southern Latitudes. *Haller* mentions, in his *Elementa Physiologiæ,* that the Russians formerly, at least, used *Nuxvomica* as an emetic. *Linnuæs* mentions in his *Lachesis lapponica,* having been informed by a credible witness, that the yellow Aconite, or wolfsbane, is brought to table somewhere in Norway in place of Cabbage. The impunity with which the Russians can swallow enormous quantities of Ardent Spirit is well known. From the account given in the journal of *Captain Lyon,* who accompanied *Captain Parry* into the arctic regions, of the bacchanalian powers of the *Esquimaux,* it would seem that those savages enjoy an insurceptibility of the poisonous energies of Alcohol that we have no conception of. He mentions, if I rightly recollect, one young man, who, in addition to former potations, I think, swallowed ten glasses of the strongest Rum in the course of a few minutes, and an hour after was free from every symptom of Inebriety.

The State of Health, too, has great influence over the action of Poisons. *Opium,* of which a few grains would destroy a man in vigorous health, may be taken to the extent of several scruples daily, by persons labouring under certain painful spasmodic complaints. I have repeatedly and beneficially prescribed for sickness, Lunar Caustic, Sugar of Lead, Opium, Prussic Acid, &c. in quantities which I should tremble to administer to health and vigour. Most literary persons, at least of the medical profession, have heard of the doses of the late Professor of the Milan hospital, Dr. *Rasori.* Tartar emetic, of which two or three Grains are the *maximum dose* in this country, was frequently prescribed by that gentleman, in

scruple doses and *half drachms,* and those repeated several times daily; yet the great majority of his patients, even by the confession, if I recollect aright, of *Ozanam,* who were so treated, recovered. Foxglove, another powerful Poison, he distributed amongst his sick, with like liberality and like good luck.

Poison is likewise dependent on the Manner in which it is applied to the living body. Some Poisons, as *Carbonic Acid,* &c. are destructive only when introduced into the lungs, and may be applied to the eye, to the concavity of the stomach, &c. and to wounds and ulcers, with perfect safety. Others, as *Viper Poison,* the *Ticunas,* &c. are, like the former, harmless in the stomach, in the eye, &c. but are deadly if applied to wounds. Other Poisons, again, are, like the first class, harmless in wounds, although bleeding, in which they differ from the second class, but yet are deadly in the eye, stomach, lungs, &c.—such is *Laurel Water* (i. e. Prussic Acid), according to *Fontana, (Traite sur le Venin de la Vipere, &c. Florence,* 1781.) Others still, of a fourth class, are destructive, however or wherever applied—such are *Arsenic, Corrosive Sublimate,* &c. &c.

Habit, likewise, has, *cæteris paribus,* great influence. *Theophrastus,* in the *ninth book* of his *Hist. Plant.* gives in illustration of that law, an account of one *Eudemus,* who, from long habit, could swallow twenty or more doses of Hellebore in one day, without inconvenience. *Galen* speaks in his work on the *Powers of simple Medicines, (b.* iii. *c.* 18,) of an old woman at Athens, who had so accustomed herself to Hemlock, that it became as it were food to her. Every one has heard of the Opium eaters and smokers of the East,

and of Turkey, some of whom can consume with safety several Drachms in the day. *Prosper Alpinus* knew many Egyptians that could eat Opium with safety, to the amount of *three* Drachms daily. "*Eo scilicet longa consuetudine a naturâ,* (he adds nearly in the words of *Galen,* in the passage above referred to,) *superato, et in alimentum quoquo modo verso.*" (*De Med. Egypt, Par.* 1645, *l.* iv. *p.* 118.) The author of the *Confessions of an English Opium eater,* could exceed *five* Drachms daily, without inconvenience; equivalent, he says, to *eight thousand drops of Laudanum;* (*Confessions, Lon.* 1822, *p.* 127.) *Pouqueville* the physician, mentions a case which Dr. Paris justly, I am convinced, regards as the most extraordinary on record: it is that of an old Turk, who had been an Opium eater in his youth, but had afterwards abandoned Opium as not sufficiently exciting, for Corrosive Sublimate, of which latter he took with comfort a drachm daily. In 1800, when Pouqueville became acquainted with his story, he had been for *thirty years* a Sublimate eater, *had seen six Sultans,* and was *one hundred years old;* (*see Pouqueville's Voyage en Morée, v.* ii. *c.* 14.) To that well ascertained law *Martial* alludes in his *Epigrams,* "*Profecit poto Mithridates sepe veneno; Toxica ne possent sæva, nocere sibi.*" (*epig.* lxxvii. *lib.* 5.)

With the preceding observations relative to the History of Poison, I find I must content myself on the present occasion; but before concluding this Introductory Essay, I consider it proper to say something as to the Plan which I have laid down for myself. It appears necessary to premise a brief

Statement relative to the Views which I take of my Duty as an Officer of this Society; not only on account of the mixed nature and uncertain boundaries of the Science I am called on to treat, but because I have been honoured with the Appointment, unshackled by instructions, either as to selection of matter, or limits of discussion.

At the very outset of my preparations for the business of this evening, I was called on to decide on the latitude of meaning attaching to the word "Toxicology." The word *Poison*, in medical language, includes, together with such substances, as commonly destroy in a few hours, or at farthest in a day or two; also many other substances, whose effects, although violent, are much less rapidly fatal. Poison is, by Physicians, applied to the Miasms of marshy lands, or of contagious fever, almost as familiarly as to the juices of the Poppy and Upas; or to the various preparations of Arsenic. It is likewise applied to the Venom of the rabid Dog, to the Virus of syphilis, and so forth. It would seem then, from the title of my office, that, in addition to the history of Opium, Prussic Acid, the Juice of Cassava, Foxglove, &c. as Poisons, I am expected to discuss the Doctrine of Contagion, the Origin and Laws of Paludal Effluvia, and other subjects of great interest and importance, not usually included in what is called Toxicology. I read, however, in the able and eloquent Address of January 16, 1829, by our Right Honourable and Noble President, that "the general design (of the Medico-Botanical Society) is the extension and improvement of the Vegetable Materia Medica through the means of botanical inquiries, of chemical analysis,

and of medical investigations and experiments." Now, the letter of that passage seems to limit the duties of your Professor of Toxicology, to the consideration of the Characters, Symptoms, and Antidotes of those Vegetable Poisons that are found in, or are likely soon to be added to, the Materia Medica: but the spirit of the passage is, if I do not deceive myself, much more comprehensive.

To improve the *Materia Medica*, we must extend, in every direction, our acquaintance with the active qualities of plants. What is Poison in one case, is Medicine in another: a remark as old, I think, as the sage of Cos. The medicinal relations, therefore, of vegetable substances, both the salutary and the noxious, are alike within the scope of Medico-Botanical research. Those substances of vegetable origin, which are known as yet by their poisonous energy only, are, therefore, as much entitled to our consideration, as those of longest established and most generally known sanative virtue. How then, could the examination of paludal effluvia be excluded? To me, it appears that it could not, with propriety, be excluded. Indeed, if I did not think it sufficiently plain, from what I have already said, that the History of Vegetable Febrific Effluvia, forms a legitimate part of the domain of Medico-Botanical Toxicology, I might adduce the fact which, so far as I can recollect, cannot be urged in favour of any of the Asiatic, or American Poisons, above alluded to: the fact, namely, that it has been known to produce, and has been in this kingdom I think employed to produce, the cure of other diseases—I allude more particularly to the Anti-phthisical Operation of the Atmosphere of Aguish Districts,

observed and made known by the late Dr. Wells. I propose, therefore, hereafter to treat of the laws of *Marsh Miasmata,* as connected with Yellow Fever, Ague, Cholera, and other formidable diseases.

Under the head, Selection of Matter, I must make another observation. It appears to me, that the consideration of animal and mineral Poison is altogether excluded, by the terms as I may say of my patent. In like manner, noxious Aeriform Substances may, with one or two exceptions, be declared foreign to the objects of my appointment. I wish it, therefore, to be understood, that with the above exceptions, I have no intention of discussing the subjects of animal, gaseous, or fossil Poison.

I shall conclude with a few words relative to the mode of exposition and illustration, that I judge most suitable to the purposes of the future Lectures.

Lectures must not only vary with their subject matter, but also with their scope and auditory; with the extent of their design and the leisure of their auditors. It would not be to my present purpose to enter into nice distinctions; but at a glance it is obvious, that no one course of Lectures could, without numerous excisions and additions, curtailments and amplifications; in short, without many and various modifications, be made available by the ablest hand, at the *Athenée,* at the *Jardin du Roi,* at the *École de Medicine,* and at the *Conservatoire des Arts & des Metiers.* The London University, to take a more familiar example, the London University requires one style of address and illustration, the Mechanics Institution another; the Royal Institution a third, and the Medico-Botanical Society, if I mistake not, a

fourth, differing more or less from all the former, as they ought respectively to differ from each other.

For my own part, in addressing, as it will be my duty to do, a mixed auditory, consisting principally of gentlemen of highly cultivated minds and of mature judgments, but of various professions, pursuits, and attainments, I shall not consider myself at liberty to enter into much detail of illustration, or to adhere very closely to scholastic methods or classifications. Condensed descriptions, rapid narrations, general deductions, and in a word, summary views shall, if I can fulfil my own wishes, by the execution of what I regard as the proper business of my office, constitute, for the most part, and characterize the ensuing discourses.

FINIS.

J. BARFIELD, Printer, 91, Wardour Street, Soho.